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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Docketing.US@motorola.com

Office Action Summary	Application No. 10/721,444	Applicant(s) SIMPSON ET AL.	
	Examiner DUNG LAM	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22,24-25 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim **1-5, 8-10, 16-19, 20, 17-19 and 21** is rejected under 35 U.S.C. 103(a) as unpatentable by ***Fishman*** (US 6084869) in view of ***Benveniste*** (US Pub. No. 2004/0264397).

3. Regarding **claim 1**, ***Fishman*** teaches a method for use by a subscriber unit to select a time to receive a transmission from a wireless local area network access point using a shared wireless communication resource (Abstract), comprising:

- receiving a beacon transmission from the access point comprising first information that corresponds to times when other subscriber units are proposing to utilize the shared wireless communication resource (reservation time slot information is sent from each terminals to access point/satellite relay system, C3 L51-61; satellite relays reservations information back to the terminals; C3 L60-67; C4 L5-23);

- using the first information to select a particular time to exchange data with the access point using the shared wireless communication resource (using the reservations info to decide when to shift to transmit the C4 L20-40).
- However, **Fishman** does not teach specifically the exchanging data is to receive data. In an analogous art, **Benveniste** teaches the concept of a mobile subscriber transmitting to an access point a temporal period to shift from sleep mode to an active mode for data reception or transmission (Abstract, step 760, Fig. 5 and 6 and 7, [0049, 0058, 0069]). Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine Fishman's teaching of scheduling and Benveniste's teaching of selecting a wake up time to receive data and be able to conserve the terminals' power while it is in the inactive mode.

4. Regarding **claim 8**, **Fishman** teaches a method for use by a wireless local area network access point to facilitate reception of transmissions from the access point by subscriber units using a shared wireless communication resource (Abstract), comprising:

- receiving transmissions from a plurality of subscriber units, wherein the transmissions include information that identifies proposed times when each of the plurality of subscriber units proposes to utilize the shared wireless communication resource including schedule information that corresponds to at least a part of the information in a beacon transmission to the subscriber units

(reservation time slot information is sent from each terminals to access point/satellite relay system, C3 L51-61; using the reservations info to decide when to shift to transmission mode C4 L20-40), such that at least one of the subscriber units can utilize the schedule information to schedule an active mode of operation that is consistent with data transmission at a selected particular time (using the reservations info to decide when to shift to transmission mode C4 L20-40).

- However, Fishman does not teach the concept of scheduling a power saving mode. **Benveniste** teaches the concept of a mobile subscriber transmitting to an access point a temporal period to shift from sleep mode to an active mode (Abstract, Fig. 5 and 6 and 7, [0049, 0058, 0069]). Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine Fishman's teaching of scheduling and Benveniste's teaching of selecting a wake up time to conserve the terminals' power more efficiently.

5. Regarding **claim 16**, **Fishman** teaches a method for permitting subscriber units using a shared wireless communication resource to utilize a wireless local area network access point (Abstract), comprising:

- at various of the subscriber units:
- transmitting to the access point information that corresponds to proposed transmission times for at least some of the various of the subscriber units

(reservation time slot information is sent from each terminals to access point/satellite relay system, C3 L51-61);

- at the access point:
- using the information to form a message; transmitting the message in a beacon transmission to the subscriber units (satellite relays all reservations back to the terminals; C3 L60-67; C4 L5-23);
- at least one of the subscriber units: receiving the beacon transmission; using the message to select a first particular time at which to shift to an active mode of operation (using the reservations info to decide when to shift to transmission mode C4 L20-40).
- However, Fishman does not the concept of shifting from sleep mode to awake mode. Benveniste teaches the concept of a mobile subscriber transmitting to an access point a temporal period to shift from sleep mode to an active mode (Abstract, Fig. 5 and 6 and 7, [0049, 0058, 0069]). Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine Fishman and Benveniste's teaching of selecting a wake up time to conserve the terminals' power more efficiently.

6. Regarding **claim 2, Fishman and Benveniste teach** all the limitations in claim 1. **Benveniste** further teaches that the step of receiving a beacon transmission occurs at a scheduled time (Step 710 & 750, Fig. 7, [0049, 0058, 0069]).

7. Regarding **claim 3, Fishman and Benveniste teach** all the limitations in claim 2. Fishman further teaches that receiving the beacon transmission at a scheduled time further comprises altering a subscriber unit's operating mode from a sleep mode of operation to an active reception mode of operation (Step 710 & 750, Fig. 7, [0049, 0058, 0069]).

8. Regarding **claim 4, Fishman and Benveniste teach** all the limitations in claim 1. Benveniste further teaches the step of using the first information to select a particular time to wake up to receive data (Step 710 & 750, Fig. 7, [0049, 0058, 0069]).

9. Regarding **claims 5 and 20, Fishman and Benveniste teach** all the limitations in claim 1 and 16 respectively. Benveniste further teaches the shared wireless communication resource comprises an 802.11 compliant shared wireless communication resource ([0009]).

10. Regarding **claim 9, Fishman and Benveniste teach** all the limitations in claim 8. **Fishman** further teaches the step of receiving transmissions from a plurality of subscriber units comprises receiving the transmissions during a contention portion of a beacon interval (C4 L46-55).

11. Regarding **claim 10, Fishman and Benveniste teach** all the limitations in claim 8. **Fishman** further teaches the step of including schedule information that

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corresponds to at least a part of the information in a beacon transmission to the subscriber units comprises identifying specific times when each of the plurality of subscriber units has proposed to make a transmission satellite relays all reservations back to the terminals; C3 L60-67; C4 L5-23).

12. Regarding **claim 17**, Fishman and Benveniste teach all the limitations of claim 16, wherein the step of using the message to select a first particular time at which to shift from a sleep mode of operation to an active mode of operation comprises a subscriber unit that did not propose a transmission time to the access point using the message to select a first particular time at which to shift from a sleep mode of operation to an active mode of operation (**Fishman**, C4 L6-45).

13. Regarding **claim 18**, Fishman and Benveniste teach all the limitations of claim 16 wherein the step of using the message to select a first particular time at which to shift from a sleep mode of operation to an active mode of operation of a subscriber unit that did propose a transmission time to the access point using the message to select a first particular time that is different from any of the proposed transmission times (**Fishman**, C4 L6-45).

14. Regarding **claim 19**, Fishman and Benveniste teach all the limitations of claim 16. He further teaches the step of transmitting to the access point information that corresponds to proposed transmission times comprises transmitting to the access

point during a beacon interval data (Benveniste Step 710 & 750, Fig. 7, [0049, 0058, 0069]).

15. Regarding **claim 21**, Fishman and Benveniste teach all the limitations as in claim

16. He further teaches the step using the information to form a message that includes all of the proposed access times from each of the subscriber units (Benveniste satellite relays all reservations back to the terminals; C3 L51-67; C4 L5-23).

16. Claim **22, 24 and 25** is rejected under 35 U.S.C. 103(a) as unpatentable by **van bokhorst et al** (US Patent. No. 6192230) in view of **Fishman et al** further in view of **Benveniste's**

17. Regarding **claim 22**, **vanBokhorst** teaches a subscriber unit for use with a wireless local area network access point using a shared wireless communication resource, (Abstract, Col. 7, 8 and 9, Fig. 9 and 10) comprising:

- a shared wireless communication resource compatible transceiver (wireless transceiver 230, Fig. 9); a controller (processor 234 Fig. 9) having at least an active mode (full-power period FP, Fig. 10) of operation and a sleep mode (low-power period LP, Fig. 10) of operation and being operably coupled to the transceiver (230, Fig. 9); a memory (236 and 248, Fig. 9) operably coupled to the controller having, at least from time to time, stored therein (message buffer to store messages, Psync timer, receive holdover time, Col 7 lines 25 Col 8 L35):

- a first scheduled time at which the controller will shift from the sleep mode of operation to the active mode of operation (time to wake up);
- a second scheduled time at which the controller will cause the transceiver to receive data (time to receive Col. 7-8) as transmitted by a master unit;
- wherein the controller comprises an inherent scheduling means for using the plurality of proposed times to select the first and second scheduled times (When the station receives some or more PTIM messages indicating that other devices want send data to it, then the mobile station stays awake to receive the messages until it finishes receiving data and goes to a doze state therefore there's an inherent scheduling means that selects the first and second times based on the proposed times from other devices. Therefore, this teaching broadly suggests a scheduling means that can control the selecting of first scheduled time (when to wake up) and second scheduled time (when to receive data) based on the plurality of times of when other devices are using the shared resources Col. 9 In 10 –22).
- However, **vanBokhorst** does not specifically teach a plurality of proposed times at which other subscriber units and the first and second schedule times and that the master unit is an access point that sends the utilization times.
- In an analogous art, **Fishman** teach
- a plurality of proposed times at which other subscriber units have proposed to utilize the shared wireless communication resource (reservation time slot

information is sent from each terminals to access point/satellite relay system, C3 L51-61).

- an access point sending a schedule of proposed times (satellite relays all reservations back to the terminals; C3 L60-67; C4 L5-23) and a scheduling means to determine when to transmit data based on when others proposal times (using the reservations info to decide when to shift to transmission mode C4 L20-40). Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine vanBokhorst's teaching of power saving method with Fishman's teaching of allowing the subscribers to decide when to transmit to partially reduce the access point's responsibility in scheduling thereby minimizing the overloading condition.
- However, vanBokhort and Fishman do not explicitly teach waking up and the second time element of receiving data from the access point. In an analogous art, **Benveniste** teaches a scheduled time of waking up to receive data transmitted by the access point (Step 710 & 750, Fig. 7, [0049, 0058, 0069]). Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to apply **vanBokhorst and Fishman's** teaching of synchronization scheme between a master and the slaves to with **Benveniste's** teaching of a scheduled wake time to minimize power consumption.

18. Regarding **claim 24**, **van Bokhorst, Fishman and Benveniste** teach the subscriber unit of claim 22, wherein **van Bokhorst** further teaches the scheduling

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means is further for causing transmission of the data to the access point at the second scheduled time when there is no proposed time (Col. 8 ln 46-60).

19. Regarding **claim 25, van Bokhorst, Fishman and Benveniste** teach the subscriber unit of claim 24 wherein Benveniste further teaches the scheduling means is further selecting another scheduled time when an apparent conflict appears to exist with another subscriber unit at the second scheduled time ([94]).

20. Claims **6, 7, 11-13, 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Fishman and Benveniste et al** (US Pub. No. 2004/0190467) in view of **Haddad** (US Pub. No. 2004/0013135).

21. Regarding **claim 6, Fishman and Benveniste teach** all the limitations in claim 1. However, Fishman does not teach a step of reselecting a new reception time if the first selected time is not available. In an analogous art, **Haddad** teaches that the AP informs each wireless station of the allocation status via the beacon packet and additional time slots can be allocated for their retransmission (para. 39). Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine Fishman's teaching of the time reception scheduling with **Haddad's** teaching of retransmission opportunity for ensure the integrity of the data transmission and thus increases the quality of service.

22. Regarding **claim 7, Fishman, Benveniste and Haddad** teach all the limitations in claim 6. However, they do not explicitly teach the step of receiving another beacon transmission from the access point that corresponds to times when other subscriber units are proposing to utilize the shared wireless communication resource; using the second information to select a new particular time to receive data from the access point using the shared wireless communication resource. Nonetheless, **Haddad** teaches that the AP informs each wireless station of the allocation status via the beacon packet and additional time slots can be allocated for their retransmission (para. 39). Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine Fishman's teaching of the time reception scheduling with **Haddad's** teaching of allowing the station to reselect another transmission opportunity to make sure the transmission is successful and thus increases the quality of service.

23. Regarding **claim 11, 12, and 13, Fishman and Benveniste** teach all the limitations in claim 10. However, he fails to teach that identifying specific times comprises identifying a particular moment in a real-time sequence, which is a time slot for a particular event. In an analogous art, Haddad teaches that from the beacon packet the AP assigns time slots for the stations to do data transmission (para. 39). Therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine Fishman's teaching of the time reception

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scheduling with **Haddad's** teaching of allowing the station to select a specific real-time time slot to give the station the flexibility of transmitting when necessary.

24. Regarding **claim 15, Fishman, Benveniste and Haddad teach** all the limitations in claim 12. However, he fails to explicitly teach that the scheduling information identifying specific times even when none of the plurality of subscriber units have proposed to make a transmission. Nonetheless, it is typical for systems to also include default settings so that the uplink and downlink communications can be minimized.

Response to Arguments

Applicant's arguments with respect to claims 1-22, 24 and 25 have been considered but are moot in view of the new ground(s) of rejection.

25. **Claim 8** recites, "A method for use by a wireless local area network access point to facilitate reception of transmissions from the access point by subscriber units using a shared wireless communication resource (Abstract), comprising:

receiving transmissions from a plurality of subscriber units, wherein the transmissions include information that identifies proposed times when each of the plurality of subscriber units proposes to utilize the shared wireless communication resource including schedule information that corresponds to at least a part of the information in a beacon transmission to the subscriber units (reservation time slot information is sent from each terminals to access point/satellite relay system, C3 L51-61), *such that at least one of the subscriber units **can** utilize the schedule information to schedule a sleep mode of operation that is consistent with data reception at a selected particular time ."*

26. The examiner notes that this italicized portion is not a positively recited limitation since there is no active step (i.e. "selecting"). The word "**can**" also makes the limitation optional.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DUNG LAM whose telephone number is (571) 272-6497. The examiner can normally be reached on M - F 9 - 5:30 pm, Every Other Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Harper can be reached on (571) 272-7605. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/VINCENT P. HARPER/
Supervisory Patent Examiner, Art Unit 2617

/Dung Lam/
Examiner, Art Unit 2617